

## CLAIMS:

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1. A device for comparison, which is designed to receive a first and a second input signal, and to emit a control signal, which is representative of a frequency difference which exists between the said signals, including:

- a phase/frequency comparator, which is designed to receive the first and second input signals, and to emit a regulation signal;
- at least one current source, which is designed to emit a charge current, with a value which is variable according to the regulation signal; and
- a capacitive element, which is designed to have the said charge current pass through it, and to generate the control signal;

10 in which device the phase/frequency comparator is designed such that the regulation signal comprises a succession of pulses, each of which has a width which is modulated according to the frequency difference which exists between said first and second input signals.

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2. A device for comparison as claimed in claim 1, in which the phase/frequency comparator includes a flip-flop RS, the inputs of which for setting to one and to zero are piloted respectively by the first and second input signals, and an output of which is designed to emit the control signal.

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3. A device for comparison as claimed in claim 1, wherein the phase/frequency comparator includes:

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- a first and a second detector for active edges of the first and second input signals respectively, the outputs of which are connected to the inputs for setting to one and to zero of the flip-flop RS; and
  - means for re-initialization of the first and second detectors, which are designed to deactivate one or the other of the said detectors, when the active edge which it has detected has been taken into account by the flip-flop RS.

4. A frequency synthesizer, including:

- an oscillator, which is designed to emit an output signal with an oscillation frequency which is controlled by means of a control signal; and
- a device for comparison as claimed in claim 1, the first and second input signals of which consist respectively of the output signal of the oscillator and a reference signal, which device is designed to supply the control signal to the oscillator.

5 5. A frequency synthesizer as claimed in claim 4, which also includes a programmable divider, which is inserted between the oscillator and the device for comparison.

10 6. A device designed for reception of radio signals, including:

- an input stage, which is designed to receive a radio signal, and to convert the said signal into an electronic output signal, with a frequency known as a radio frequency;
- a frequency synthesizer as claimed in claim 4, which is designed to emit an output signal with a frequency known as an oscillation frequency; and
- a mixer, which is designed to receive the output signals of the input stage and of the frequency synthesizer, and to emit a signal with a frequency which is equal to a difference between the radio frequency and the oscillation frequency.

15 20 7. A method for controlling an oscillation frequency of an oscillator with controlled voltage, including the following steps:

- processing of a regulation signal, consisting of a succession of pulses, each of which has a width which is modulated according to a frequency difference which exists between a first and a second signal;
- 25 • use of the said regulation signal in order to pilot at least one current source, which is designed to emit a charge current; and
- use as a control signal, of a voltage which is generated by a capacitive element, through which the said charge current passes.